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UNITED STATES FEDERAL COMMUNICATIONS COMMISSION



CONNECT2HEALTHFCC TASK FORCE
VIRTUAL LISTENING SESSION - TECHNOLOGY AND BROADBAND SERVICES FORUM

Washington, D.C.

Friday, September 22, 2017

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P R O C E E D I N G S

(1:32 p.m.)

OPERATOR: Ladies and gentlemen, thank you for standing by. Welcome to Connect2Health FCC Virtual Listening Session Technology and Broadband Services Forum. At this time all participants are in a listen-only mode, later there will be an opportunity for your comments and instructions will be given at that time. If you should require assistance during this call you may press * followed by 0 and an operator will assist you offline. Also, as a reminder, today's teleconference is being recorded. Now at this time I will list the parties who are on the conference. We have with us John Windhausen with SHLB, Tim Koxlien with Telequality Com, Jordy Goldberg with Hughes Network, Preston Wise with FCC, Syed Hosain with Aeris, Stewart Ferguson of Alaska Tribal Health, Troy Clavel with Avera eCARE, Courtney Neville with Competitive Carriers, Ethan Lucarelli with Inmarsat, Jane Snowdon, IBM, Darryl Cooper, FCC, Jackie McCarthy with CTIA,

David Ahern with FCC, Rick Hampton, Partners Healthcare, Tracy Brewer, Ohio University, Marc Siry with Comcast, Verné Boerner with Alaska Native, Stephen Berger with TEM Consulting, Rick Shadelbauer with NTCA Rural Broadband, Steve Garland with Anderson Court Reporting, Steven Dorf with Telequality, Terre Logsdon with Lake County Broadband, Ben Bartolome with FCC, Susan Malloy with SES Networks, Colin Underwood with Alaska Communications, Jeff Riordan with FCC, Joel Thayer with ACT Application, and also in the room with FCC Connect2Health Task Force we have Michele Ellison, Karen Onyeije, Ben Bartolome, Dr. Chris Gibbons, Dr. David Ahern, Dr. Kelly Murphy, Katie Gorscak, Louis Peraertz, and Dr. Yahya Shaikh. And at this time we'll turn the conference over to your host, Mr. Louis Peraertz. Please go ahead.

MR. PERAERTZ: Good afternoon, everyone. On behalf of our Chair and Deputy General Counsel of the FCC, Michele Ellison, I would like to welcome all participants to the Third Virtual Listening Session held by the Connect2Health Task

Force.

These sessions serve two important purposes. First, they support the Connect2Health Task Force development of recommendations on key regulatory policy technical and infrastructure issues concerning the broadband-enabled health and care ecosystem as described in the April 2017 public notice issued in GN docket No. 16-46. Second, they facilitate targeted input from non-traditional stakeholders and those outside the Washington D.C. geographic area.

In today's forum we will focus on policy measures that could accelerate broadband deployment and provide greater access to merging broadband-enabled health technologies and solutions. We want to know about the most advanced broadband- enabled healthcare technologies currently available, but also about emerging solutions that we should expect to see five to ten years from now. The FCC wants to know what policies it can explore that could ensure that these new and emerging tech solutions are

available to all Americans including those in rural areas, low-income communities, on tribal lands, and people living with physical accessibility challenges.

The participants in this session include companies providing internet-of-things solutions and artificial intelligence capabilities and engineers working with large healthcare systems and organizations representing rural interests. It also includes representatives of wireless service providers, state and local governments, healthcare providers, researchers, and providers of telemedicine and telehealth services. This is your opportunity to be the voice for your constituents and communities and to provide input to the Task Force.

I would now like to turn it over to Dr. Yahya Shaikh for his introductory remarks.

DR. SHAIKH: Thank you, Louis. Over the past decade we've seen connectivity become an integral part of our health and care. Connected environments are no longer luxuries, they're

imperative for healthy and fulfilling lives for most people in the information age. The impact of connectivity on health is not just linear but is in fact multiplicative. If we consider factors in which we are born, live, and grow, factors that public health practitioners call social determinants of health, we see that better access to education leads to more facilities online resources which in turn can increase access to job training and employment opportunities, and in a recursive loop strengthen the connected health ecosystem around the person.

We also see that communities with the poorest resources in the physician environment also tend to have the least access to connectivity and resources in the virtual environment. While 20 percent of Americans live in rural communities only 10 percent of primary care physicians work there. These are the same communities with the worst broadband access levels. When communities that lack physical resources in their environment are also the same communities with poor virtual

access to them then the digital disparity is not only widening but it's widening faster and faster.

A major part of making connected ecosystems effective are the innovations that emerge from them that make opportunity available for everyone. A major part of facilitating innovation is ensuring that infrastructure exists for innovators to imagine a vision of the future, and that infrastructure also exists to deploy those innovations to markets.

In this session we want to understand connectivity barriers to your visions of the future. Hopefully by the end of the session we will be able to understand visions of a connected future, connectivity barriers to achieving them, and possible recommendations for ways forward.

The first issue we would like to discuss is identifying new and emerging broadband-enabled health technology services. Help us think five to ten years in the future. Should we expect to see widespread adoption of advanced technology such as virtual reality, augmented intelligence

technologies and internet things in the healthcare services industry? What other types of products and services do you envision being developed that could support telemedicine, telehealth, or individual community- based health and care in general?

MR. PERAERTZ: Tony, at this point we would like to open the lines for the participants to speak.

OPERATOR: Thank you very much. Ladies and gentlemen at this time if you'd like to pose a comment you may press * followed by 1. Again, if you have comments on today's conference you may queue up by pressing * followed by 1. Our first comment comes from Jane Snowdon with IBM. Please go ahead.

MS. SNOWDON: Good afternoon. My name is Jane Snowdon, I am Associate Chief Health Officer at IBM Watson Health. Thank you for the opportunity to share some thoughts and engage in a meaningful dialogue on the important topic of new and emerging broadband-enabled health technologies

and services.

The mission of IBM Watson Health is to improve lives and give hope by delivering innovation to address the world's most pressing health challenges through data and cognitive insight. Cognitive computing is broadly defined as the computational approach to augmenting human intelligence. Cognitive systems use natural language processing and understanding and deep machine learning to answer questions, uncover trends, and formulate insights based on evidence that can expand a human's ability to solve problems and aid in decision-making.

With the advent of enhanced connectivity advances in technology coupled with the explosion of data from medical records, journal articles, and genomics to wearable social and behavioral determinants of health and the weather are helping clinicians to take better care of their patients, government program leaders to efficiently care for their clients, and individuals to take better care of themselves.

for patients by helping doctors identify potential cancer-causing mutations and mapping those mutations to evidence-based therapeutic options.

Now, through partnerships with Quest Diagnostics and Alumina, clinicians and patients around the world can access via Watson For Genomics the deep cancer expertise from over 20 leading healthcare intuitions and the genomic sequencing capabilities of Broad Institute of MIT and Harvard.

Internet of things solutions help enable medical device manufacturers and healthcare providers to achieve increased levels of patient engagement and medical adherence. For instance, Medtronic and IBM have partnered to tackle diabetes. In 2015, 30.3 million Americans or 9.4 percent of the population had diabetes. One solution, Sugar IQ, is a personalized diabetes mobile companion with real-time glucose insights for individuals with diabetes to help make daily diabetes management easier and more effective. Sugar IQ provides personalized real-time insights

based on time of day or week, glucose, meals, and other behaviors. It discovers impact on glucose levels from a specific food or therapy action and identifies patterns based on retrospective continuous glucose monitor and pump data to help change patient behavior and make better informed diabetes decisions.

A second solution turning point is an integrated and personalized diabetes care program with coaching services and risk stratification for healthcare systems to help high-risk and at-risk individuals with diabetes improve their lives and reduce the cost of care by helping them avoid acute episodes, increasing their insulin therapy adherence, and controlling their A1C weight, blood pressure, and LDL.

Thinking five to ten years into the future I'd like to mention two broader health ecosystems plays: Healthcare services in rural areas blockchain. According to a recent American Society of Clinical Oncology study demand for healthcare will increase 42 percent over the next

decade. By 2020 there are likely to be 26 million new cases of cancer, many of which will be in developing countries. In places like China, India, and Africa cancer rates are exploding, there are not enough doctors to manage the patients, and cancer treatment drugs may be in short supply. There may be some areas where broadband or cellular are not available such as in rural areas. Hangzhou Cognitive Care in China is working with hospitals to increase efficiencies and enabling physicians to deliver care in rural areas.

In sub-Saharan Africa the American Cancer Society and IBM Health Corps work together with the National Comprehensive Cancer Network and the Clinton Health Access Initiative to create ChemoQuant, an online chemotherapy forecasting tool to assist African health ministries with constructing forecasts and budgets and planning procurements to secure the best quality cancer treatment products at the best prices from suppliers.

Finally, the healthcare ecosystem is complex with multiple stakeholders and intricate sensitive interactions. This leads to both data security and privacy challenges and operational inefficiencies. Ownership and trusted access to medical information and administrative data is critical, yet the process must be made simpler and less costly. IBM Watson Health and the U.S. Food and Drug Administration have entered into a two-year research initiative to study the use of blockchain for secure exchange of healthcare data. New healthcare research is seeking to apply blockchain's distributed ledger and decentralized database solutions to the critical issues of interoperability, security, record universality, and more.

Intriguing uses in other industries are being extended to healthcare, such as extending blockchain's smart contracts to provider network management or connecting myriad medical devices through common blockchain-enabled systems of information relationships. Moving forward,

blockchain technology and encryption will drive innovation in healthcare services and administration.

In conclusion, IBM encourages the FCC in collaboration with other federal agencies such as HHS and the states as articulated in the policy blog to Secretary Price to use advanced technologies to improve program quality for the nation including the country's most vulnerable populations, rural communities, the elderly, and other health despair groups. The need for speed increases when sending data images and video. Telehealth services and systems have made the most progress in remote management of post-acute care among patients with chronic conditions many of whom have one or more core (inaudible) such as heart disease, cancer, diabetes, or opioid addiction. Broadband-enabled health technologies and services will help to marketize healthcare.

MR. PERAERTZ: Thank you very much, Jane. That was terrific. We're really interested in learning about approaches to bridging digital

divides and bridging digital disparities in rural areas and international examples such as the one you brought up would be really exciting for us to learn from.

Tony, would you please invite the next participant to speak?

OPERATOR: Thank you. The next comment will come from Marc Siry with Comcast. Please go ahead.

MR. SIRY: Hello, my name is Marc Siry and I am a vice president of Strategic Development at Comcast and the general manager for our Comcast Connected Health Initiative. We're thankful for this opportunity to participate in the exploration of new technologies, techniques, and approaches to bring our collective vision of connected health to life. This is a very exciting time for the industry, for this entire field, and for the consumers, providers, and other participants in the healthcare economy who will ultimately benefit from these technologies and new innovations.

Comcast initiatives are helping

healthcare providers unlock the promise of broadband-enabled healthcare technologies through the use of our connectivity technology and media to improve the patient experience in the hospital, in the home, or on the go. We really believe that the patient experience is core and central to accessing the promise of connected health.

Comcast Connected Health and provide transformative solutions for the healthcare industry through the use of video messaging, home device monitoring, and patient data analytics capabilities. For example, we provide innovative ways for providers and patients to communicate through patient- clinician video messaging and screen-sharing capabilities that allow doctors, patients, and their caregivers to share documents and other information around the delivery of a personalized care plan.

We will also smooth the transition of care from provider facilities to patients' homes where we obviously have a significant footprint by enabling in-home connected device networks that

can monitor patient activities, collect data useful for ongoing treatment, and provide reminders and pop- ups to allow for better medication adherence.

We also have high quality educational content that can help patients understand how to access their care more effectively, provide them with the information they need to make better health choices both in their personal lives and in the lives of those they care for, and help them understand how they can access and leverage new technologies to improve their care.

We brought this promise to life in several partnerships that I'd like to talk about now. First with Kaiser Permanente a leading integrated delivery network, we worked to create a maturity-focused application which expressed itself on every screen a consumer can access including their televisions. The app features videos along with interactive elements that allow mothers-to-be and their caregivers to complete surveys and set preferences for their own

pregnancy timelines. Our initial trials were highly successful with the race for sign-up and use of the app much higher than expected. We found that bringing these educational videos onto the television set allowed for mothers-to-be to access this health content in a comfortable location and often with several of their family members alongside them, and it really changed the way they were able to access this information.

We're now in the process of launching an exciting pilot with AmeriHealth Caritas, a managed care provider. We're partnering with AmeriHealth Caritas to provide online tools and content to patients in an effort to empower Medicaid recipients with more robust health resources. We launched a pilot starting in June 2017 in Pennsylvania and it includes patient-facing care content, video messaging, and care community support with an effort to really activate all of the caregiving resources that are already in the community and connect them more effectively to then help drive better care for the members of

AmeriHealth Caritas. We are rolling out additional launches in other areas in the very near future.

Finally, we are partnering with payers and other providers in order to drive these platforms to underserved communities in a way that will allow these communities who, as mentioned earlier, often have difficulty accessing physical healthcare resources to more effectively access digital healthcare resources. We think that there is an enormous opportunity to completely transform the way that these communities regard these tools, access these tools, and use them in order to help overcome some of those social determinants that were mentioned before.

We're excited to be a part of this. We think that we can play a key role in delivering these tools at scale which is always very important for success in these initiatives. And we're excited to partner with all of the entities on this call to make sure that this future can become a reality. Thank you very much.

MR. PERAERTZ: Thank you, Marc. That is a very interesting project that you have going on with AmeriHealth Caritas. Tony, would you please announce the next participant?

OPERATOR: Thank you. The next comment will come from Joel Thayer with ACT Application. Please go ahead.

MR. THAYER: Hi, my name is Joel Thayer and I am the Policy Counsel of App Association's Connected Health Initiative, or CHI. We submit the following comments in support of the Commission's efforts to address the growing need for interconnectivity in the healthcare industry.

CHI is leading the effort by connected health ecosystem stakeholders to encourage responsible and secured use of connected health innovation throughout the continuum of care. By doing so we will create an environment in which patients and consumers experience improved telehealth. CHI incentivizes the use of connected health technologies and supports an environment in which patients and consumers can see improvement

developments offer the ability to save countless Americans' lives while lowering costs.

The connected health sector is at the brink of incredible growth and has the potential to create thousands of high paying jobs across the United States but the American patient remains the primary beneficiary. The critical nature of the healthcare sector necessitates that improvements be made to America's critical infrastructure. This includes broadband infrastructure and measures to give healthcare providers the ability to use connected heath technology products and services throughout the continuum of care both inside and outside the doctor's office.

Ample evidence exists and continues to grow identifying telehealth and remote patient monitoring of PGHD as cornerstones of advanced healthcare systems particularly with respect to (inaudible) and chronic care (inaudible) for patients of rural healthcare in the country. The benefit of broadband adoption in connected health includes improved care, reduced hospitalizations,

prevents complications and (inaudible) particularly for those that are chronically ill. To inform the Commission's work, we have appended a non-inclusive list of studies demonstrating the improved patient outcomes and cost-saving members savings of telehealth and remote patient monitors for patients. Given the extraordinary advancement in telehealth space the Commission must maintain its focus on building 5G while closing the digital divide.

CHI is encouraged by Chairman Ajit Pai's recent actions to make 5G deployment a priority for the Commission. Additionally, we applaud the Chairman's efforts to close the digital divide by establishing the Broadband Development Advisory Committee(inaudible) opportunities on programs and in particular the digital empowerment zones objective which would bring broadband and digital opportunity to our nation's most economically challenged areas.

CHI urges the Commission to continue on this trajectory to ensure that the necessary

infrastructure is in place to facilitate more innovative healthcare solutions in this country. CHI also encourages the Commission to coordinate with other key agencies in the connected health space such as the Department of Health and Humans Services. CHI stands ready to partner with the Commission as the Connect2Health Task Force focuses on these specific goals and measures and hopefully helps telehealth policy take shape.

Moreover, the Commission should allow innovators to leverage TV white spaces to bring much needed broadband to rural areas. Providing the industry with more unlicensed bands can assist with success of deployment of 5G infrastructure and we urge this Task Force to support the increased innovation within the unlicensed spectrum. Unlicensed bands will play a key role in the success of 5G networks and the Chairman and this Task Force should consider it as a viable solution to remote and structure buildout and to IOT.

While this proceeding addresses the

challenges to 5G deployment in the long term, especially when it comes to healthcare services, we believe that the Commission can take an important step to greater connectivity in the short term including the resolution of several pending matters related to unused TV white sets and bands.

In conclusion, we appreciate the opportunity to comment on this very important topic and look forward to working with everyone on this Task Force and including all those industry stakeholders to accomplish this ever-growing and every-challenging goal. We appreciate your time, thank you.

MR. PERAERTZ: Thank you very much, Joel, for your suggestions on 5G, digital empowerment zones, and TV white spaces. Tony, would you please announce the next participant?

OPERATOR: Thank you. The next comment will come from Courtney Neville with Competitive Carriers Association. Please go ahead.

MS. NEVILLE: Great, thanks. Courtney

Neville with Competitive Carriers Association; I'm our policy counsel. I just want to thank you all for the opportunity to be here today and participate in this exciting discussion. I think there are a lot of great initiatives and innovations on the horizon and hopefully our collaboration can help foster those.

Before we get into that I want to give you a brief background on CCA. We represent nearly a hundred wireless carriers that serve urban centers and most rural parts of our country along with vendors and supplies that feed the mobile ecosystem. Something exciting about CCA members is that most of them are small businesses that are members of the communities that they serve, so they are really engaged in the Connect2Health Initiative and our members applaud the FCC on the Conncect2Health Task Force for all of the efforts to promote the advancement of these broadband-enabled health technologies especially this year with the release of the PN and with these virtual listening sessions.

I wanted to first highlight some CCA member programs that some of our members have deployed across the U.S. and especially in rural and remote areas. One of the exciting things about these initiatives is that they help to bridge the digital divide, especially in the health arena. They connect rural residents with the same medical attention that is provided by their urban counterparts which is really exciting.

First, I want to highlight CCA member's C-Spire in Mississippi. You might know that they launched a pilot program called the Diabetes Telehealth Network which focused on improving healthcare in rural Mississippi for individuals struggling with chronic diabetes through remote monitoring and data analytics. They relied on their own mobile broadband communications and participants in the program were provided tablets to enable their healthcare providers to remotely manage their patients and automatically capture individual health data to deliver the connected monitoring that was necessary and their

cost-effective care.

According to the Sunflower Medical Center, which is the local medical center there, the first six months of the program saved approximately $400,000, reduced A1C levels by 1.7 percent, and saw no ER visits or hospitalizations among the 100 residents involved in the pilot program. Initial results also saw not a single case of hospital re-admission and over 10,000 miles of patient travel saved in patient visits which is really exciting.

So, because of this success the program has been tentatively extended for the next five years and they project that these initiatives will save $189 million a year in Medicaid expenses which over five years equates to nearly $1 billion. I think we can all agree that that's a pretty penny, so that's really exciting.

Another CCA member, General Communication, Inc., or GCI, has implemented a successful telehealth program called ConnectMD. Through this program GCI supports telemedicine

services like remote patient monitoring to customers in Alaska and in most instances the ConnectMD network is the only way that rural Alaskans can gain access to specialist. The program also allows these communities to offer readily available cost-effective health services to their residents and have eliminated the need for residents to take long and expensive trips for medical attention.

Additionally, at lot of CCA members participate in programs like iSelectMD which offers a mobile platform and online portal for patients to connect with medical professionals in their area. Members that participate in this program include Blue Grass Cellular, Carolina West and MTPCS which cover consumers in states like Kentucky and North Carolina. The iSelectMD program is exciting because like I noted it allows a lot of CCA members to engage in the portal and can ensure consumers in their network's footprints continue to have access to the best service and programs available.

I also wanted to note that Sprint has partnered with a technology vendor called IDEAL LIFE to provide devices that transmit patient monitoring data directly to patients' physicians and their relative family members which is particularly important especially for young patients and senior care as well.

Finally, Accapability which is based in Iowa recently launched a quote Heartland Global Health Initiative which is a specially equipped van that offers meek mobile health services and creates an electronic medical record for communities in the areas across the state.

These are really exciting programs and we're proud that CCA members are really engaged in telehealth solutions but it's important to note that their success hinges on FCC and industry action and collaboration and without the proper network capabilities their efforts could be thwarted. So, CCA continues to engage with the FCC to ensure that competitive carriers have access to low, mid, and high band spectrum. The

low band spectrum is particularly important because it has the latency and capability to travel far distances which is critical for these networks that are especially working in rural and remote areas. And then mid and high band spectrum of course is important because it will be the foundation for these 5G networks and next generation technologies that will eventually support these telehealth solutions.

CCA continues to advocate for streamlined infrastructure sighting processes and is honored to participate in the FCC's Removing State and Local Barriers Working Group of its Broadband Deployment Advisory Committee, or BDAC. We are excited to partner with industry and help to spur mobile broadband across all areas of the United States.

Finally, we have continued to applaud the FCC's Universal Service Fund, or USF, efforts particularly in the Mobility Fund II Program. A recent report and order just allocated approximately $4.5 billion to fill coverage gaps

over the next ten years which is something that's really exciting and will be imperative to making sure that these rural consumers are accessing medical technologies remotely and can continue to have those services available to them.

Lastly, I just wanted to thank you all again for allowing CCA to participate and we are excited to hear what the rest of the participants bring to the discussion today.

MR. PERAERTZ: Thank you, Courtney, very much. The Connect2Health Task Force with Commissioner Clyburn travelled to Mississippi in December 2014 and saw all of the great work that the partnership that C-Spire had with University of Mississippi Medical Center and the Diabetes Telehealth Network, all the great work that was being done there. And you're right, $189 million a year is quite a pretty penny. So, thank you very much for that and your recommendations as well.

MS. NEVILLE: Thanks, Louis.

MR. PERAERTZ: Tony, would you please

identify the next participant?

OPERATOR: Thank you. The next comment will come from Jackie McCarthy with CTIA. Please go ahead.

MS. MCCARTHY: Thank you. My name is Jackie McCarthy and I am Assistant Vice President of Regulatory Affairs at CTIA. We thank you for the opportunity to participate today and we're glad to be here.

CTIA represents the U.S. wireless communications industry and companies throughout the ecosystem including carriers, device manufacturers, and suppliers. I lead CTIA's internet of things policy participation in sectors like mobile health and I lead CTIA's Mobile Healthcare Working Group.

We commend the Commission and the Task Force for focusing on the steps that we can take to stay ahead of the health technology curve. Wireless technology, as you've heard from some of our colleagues, enables increased access to healthcare, improved outcomes, and reduced costs

especially for seniors, rural Americans, and those with accessibility needs.

In terms of wireless technology it's particularly well-suited for costs and outcomes issues. Wireless technology supports applications like remote patient monitoring and diagnostics which can facilitate clinical trials, also allow healthcare providers to care more efficiently for patients, and can empower patients and consumers to manage chronic conditions and stay healthy. Wireless innovations can also enable seniors and consumers with disabilities to engage fully with their communities through functionalities like voice commands, artificial intelligence platforms, and location information technology. One of the other speakers mentioned 5G wireless networks and their promise. 5G mobile broadband definitely will enable a lot of the future uses of mobile health and broadband-enabled health technologies.

Some of the characteristics from the network perspective of 5G that makes it especially useful for healthcare applications include

increased bandwidth for data intensive services like high resolution medical imaging or remote procedures or remote surgery. Also, 5G enables many more devices and centers to be on the network receiving and sending data and that will allow for the proliferation of connected devices, not just phones and tablets but things like fitness tracking devices, connected medical devices, and in- field and public safety or first responder related connected devices.

5G networks will also enable very low latency on wireless networks. Latency is the time between when a device requests to begin a task and when it actually completes that task. So, for things like, again, remote surgery or critical care applications that low latency and almost real- time or very, very close to real-time data receipt is critically important.

Just to step back a little bit on data usage. It has been sky rocketing in recent years and we expect it will continue. Americans are using 35 times more mobile data today than in 2010

and data usage is projected to increase five-fold from this year to 2021. So our companies are building the 5G wireless networks that will accommodate these and other uses.

In terms of policy objectives, very similar to what we've heard from other speakers, we urge the Commission to make available both low, mid, and high band spectrum for licensed uses. We need all levels of this spectrum to make 5G a reality. Likewise, the Commission's efforts to alleviate delays and unreasonable costs associated with infrastructure deployment for wireless broadband is much appreciated and then the continued availability of Universal Service Fund subsidies through the Mobility Fund and the Rural Health Care Program is also really important to achieving these objectives. Thank you.

MR. PERAERTZ: Thank you very much, Jackie. The Connect2Health Task Force worked with CTIA to have an event down in Florida. We very much appreciate the President and CEO of CTIA and former FCC Commissioner, Meredith Atwell Baker's

remarks during that convergence. Thank you.

Tony, can you please announce the next speaker?

OPERATOR: Thank you. The next comment will come from Stewart Ferguson with Alaska Native Tribal Health Consortium. Your line is open, please go ahead.

DR. FERGUSON: Good morning. My name is Stewart Ferguson, I'm the Chief Technology Officer for the Alaska Native Tribal Health Consortium in Anchorage, Alaska. My organization is the largest most comprehensive tribal health organization in the United States. We not only co-manage the largest tribal hospital in the United States, we also are part of the Alaska Tribal Health System which provides care to 153,000 Alaska natives through a partnership with 30 tribal health organizations and managing more than 200 facilities in Alaska.

So, thank you for the opportunity to address the Task Force. Knowing where we were ten years ago with connectivity in Alaska it's very

exciting to think where we might go in the next ten years with your leadership.

The point I wanted to emphasize here, and I'm not sure if it's becoming clear through the other presenters, is that connectivity is now absolutely mission-critical to my colleagues and partners in delivering healthcare to some of the country's most remote communities. We simply can't live without it and our needs continue to grow, and we have to think about how this Task Force can help us develop the new technologies in an affordable manner.

Let me start by reiterating the earlier statement that the patients simply are not where the providers are, and that's incredibly true in Alaska. Without connectivity patients now become more portable than their data. Quite seriously we have travelled patients for many years while their data stayed behind. Now with connectivity the data becomes more portable than the patient and we can change how we deliver healthcare.

As evidence of this, the Alaska Tribal

Health System has relied on telehealth programs for more than 20 years to deliver care throughout the state at over 600,000 square miles. The system has been used by 4,500 providers for more than 300,000 clinical cases. We've generated almost 70,000 EKGs for heart patients, over 200,000 images of ear disease, and another 500,000 images of trauma wounds and rashes that have been moved through our conNectivity supported by the telecommunications program and USAC funding. (inaudible) percent of our entire native population are involved in telehealth on an annual basis, which I would suggest is one of the greatest penetrations of telehealth in any system in the world. Most specialty consultations are completed within four hours regardless of where the patient lives. For the first time, I think we're providing access to care in our remote regions that's actually better than what you can get in major urban areas in the lower 48. Our major medical center offers 30 different specialties by videoconferencing. More than 70

percent of all our consultations prevent patients from having to travel resulting in a statewide savings of approximately $10 million annually just in avoided patient travel.

The bottom line is that people living in rural and frontier locations such as Alaska villages squeeze more out of every bit of connectivity than anyone else in the world in my opinion. The partnership between the FCC and the tribes has done much to address disparities, not only in connectivity but in the delivery of healthcare over the last 15 to 20 years. But my worry, and it's important I believe for the FCC Task Force to hear this, is that the subsidy program, the telecommunications program, the USAC funding is unquestionably the only reason we are able to do this in Alaska, otherwise connectivity is too expensive. It can cost between $10- and $20,000 per month for a T1 line in Alaska. Recent limits that force prorating of use (inaudible) subsidies have a dramatically unfair effect on Alaska tribes raising our out of pocket costs for

connectivity by more than 1000 percent and creating a real risk of staff cuts, reduction in healthcare, and potentially dismantling the programs I've just discussed.

This is perhaps the most important point I can make today, that we continue to expand our infrastructure in a cost-effective manner and that we support remote communities for both our needs and where the costs are the greatest. I urge the Task Force to make sure that we do not leave our remote communities behind. Thank you for this opportunity.

MR. PERAERTZ: Thank you, Stewart. I hope to delve into your engineering expertise with regard to the challenges faced by wireless connectivity in Alaska and other rural areas later on in this conversation.

Tony, would you please announce the next participant?

OPERATOR: Thank you. The next comment will come from Ethan Lucarelli with Inmarsat. Please go ahead.

are largely international by virtue of our business, some examples of the projects we've been involved in might be of interest to the Task Force.

In Benin we worked with clinics in two rural areas to monitor, diagnose, and treat adults and children. Using a telemedicine application to gather patient information on tablets and send it back using Inmarsat (inaudible) links to urban hospitals and doctors these clinics are able to monitor and evaluate health in rural areas. When we deployed this program first in 2014 in these two African villages within three months remote doctors using this technology were able to identify instances of various diseases like diabetes, hyperglycemia, hypertension, and other conditions in over 850 adults and children referring those for further treatment. It also enabled over 250 consultations for people who previously didn't benefit from any social programs and we were able to identify almost 100 people with serious conditions that needed immediate

attention that they wouldn't have gotten for weeks or months without this sort of connectivity.

Currently we're also partnering with funding from the UK Space Agency with an organization called InStrat Global Health Solutions and others on a project that brings training videos and medical service applications to medical workers in Nigeria. So, this training focuses on maternal and newborn child health issues and provides information that's vital and that can help save lives using mobile satellite broadband services which are portable and deployable, we can transmit information directly to medical workers on the front lines, (inaudible) communities that otherwise wouldn't have access to this information.

Getting this affordable and reliable connectivity into the hands of health workers also can support additional applications like healthcare database management, identity registration, insurance claim tracking, disease surveillance and monitoring that can help improve

early response to epidemics before they develop.

A little closer to home, in light of recent tragic headlines, I don't think any of us need any reminding about the horrific destruction that can be causes by natural disasters. As we've seen this isn't limited to far off lands. Inmarsat and other satellite operators partner closely with relief organizations. In my company we've been working for over 15 years with groups like Télécoms Sans Frontières and Doctors Without Borders, other organizations so that we can support relief efforts in the immediate aftermath of major disasters. We and other satellite operators are there in every major disaster in recent memory including the hurricanes that we've seen in the last several weeks. When all the other connectivity is down, when an entire island is without power, when networks are otherwise completely compromised its mobile satellite services that relief workers use and rely upon for those critical communications.

So, getting back to the question that

was asked, I'd say that looking five to ten years out I think it's important to focus on those three aspects I identified first: Availability, sufficiency, and the reliability of connectivity. In terms of availability some of these eye-catching and exciting technologies that we hear about like remote surgery or 5G terrestrial networks, they might be more than five to ten years off especially for rural and remote areas that have unique economic, social, and geographic challenges. Reiterating what a speaker just said a few moments ago from Alaska Native, connectivity is mission- critical. It's an unfortunate reality that many areas in the U.S. Remain unconnected to broadband including wireless, and despite the best efforts of everyone on this call and everywhere else those challenges might not be resolved in the next five to ten years.

But the satellite sector is a leader in connecting these areas. Satellite by its nature is a ubiquitous service. Looking at sufficiency, again, I'd say current networks aren't always

sufficient for the purposes that we want to date let alone the services that we need five to ten years or that we expect more than ten years down the road. But current and future satellite broadband services are robust, blanketing the entire United States in broadband connectivity in excess of the FCC's current 25-3 advanced telecommunications service definition. New services that are going up, new satellite constellations going up, are going to provide greater capacity, lower latency, really unlocking all sorts of new applications and solutions.

Finally, reliability. A lot of areas have real challenges with reliability, whether it's weather related, whether it's geography, whatever the case may be. But again, I would say with satellite systems these systems are developed with reliability built in. It's sort of the core requirement for a lot of our customers is that these services be 5-9s reliable, something along those lines. A lot of that is based on the lack of reliance on local terrestrial infrastructure.

So, in each of these cases it's my belief that both current and future satellite communications can be an important part of telehealth solutions. We look forward to continuing to work with partners globally and in the United States on these matters, and we urge the FCC as well as local and regional stakeholders to keep these solutions in mind. Promoting continued availability and growth to satellite services, ensuring sufficient access to necessary input resources like spectrum for service links and gateway links.

With that I'll yield the floor back and look forward to continuing the conversation. Thank you.

MR. PERAERTZ: Thank you, Ethan, for that passionate and persuasive explanation about why satellite services still remain an important part of the connectivity picture.

Tony, can you please announce the next participant?

OPERATOR: Thank you. The next comment